



# TRANSITION FROM LINEAR TO CIRCULAR ENTREPRENEURIAL MINDSETS: THE ROLE OF BUSINESS MODEL INNOVATION, TECHNOLOGICAL ADVANCEMENTS, AND POLICY AND REGULATION

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## ABSTRACT

The transition from a linear to a circular entrepreneurial mindset is a critical step toward achieving a sustainable future. This shift involves moving away from the traditional “take, make, dispose” linear economy to a regenerative and restorative circular economy that minimizes waste, optimizes resource use, and promotes environmental sustainability. This transition is driven by three key factors: business model innovation, technological advancements, and policy and regulation. This Paper explores how these factors intersect and influence the adoption of circular entrepreneurial mindsets. Drawing from an interdisciplinary body of literature, the paper examines how entrepreneurs are reimagining value creation by integrating principles of circular economy—such as reuse, remanufacturing, and regeneration—into their core strategies. Business model innovation emerges as a critical enabler, allowing firms to decouple growth from resource consumption. Concurrently, advancements in digital technologies, including artificial intelligence, blockchain, and the Internet of Things, are accelerating circular practices by enhancing traceability, efficiency, and stakeholder engagement. Moreover, the influence of public policy and regulation is assessed in shaping entrepreneurial behaviour and market dynamics, highlighting the importance of supportive institutional environments.

**KEYWORDS:** Circular Economy, Entrepreneurial Mindset, Business Model Innovation, Technological Advancement, Policy, Regulation

## INTRODUCTION

The prevailing linear economic model, characterized by a ‘take-make-dispose’ approach, has propelled unprecedented economic growth but at a significant environmental cost, leading to resource depletion, pollution, and climate change (Henry et al., 2019). Recognizing the limitations of this linear system, a transition towards a circular economy is increasingly advocated as a pathway to sustainable development, requiring a fundamental shift in entrepreneurial mindsets and practices (Goyal et al., 2018). This involves designing products for durability, reuse, and recyclability, as well as implementing innovative business models that prioritize resource efficiency and waste reduction (Jones & Comfort, 2021). The urgency of this transition is underscored by the recognition that without effective resource management, the current environmental situation will lead to dire consequences, highlighting the need for proactive measures to embrace circular economy principles. This transition necessitates a fundamental shift in how entrepreneurs perceive value creation, moving beyond traditional profit maximization to encompass environmental and social considerations (Raj & Aithal, 2020). The shift from a linear to a circular economy is not merely a matter of adopting new technologies or business models; it requires a fundamental transformation in entrepreneurial mindsets, values, and practices (Boffa et al., 2023).

## MATERIALS AND METHODS:

This research employs an integrative literature review methodology to synthesize and analyse existing knowledge on the transition from linear to circular entrepreneurial mindsets. The study focuses on three central themes: business model innovation, technological advancements, and policy and regulation. The objective of the study is to explore the role and interrelationship of the above variables in shaping entrepreneurial mindsets in the context of the circular economy.

## RESULTS AND DISCUSSION

The review of existing literature reveals a growing convergence of innovation, technology, and regulation as pivotal enablers in shifting entrepreneurial mindsets from linear to circular models. From a comprehensive literature review, three major themes are emerged: (1) business model innovation as a strategic lever, (2) technological advancements as operational enablers, and (3) policy and regulation as systemic drivers. Each theme contributes uniquely to reshaping entrepreneurial strategies in alignment with circular economy principles.

### Business Model Innovation: A Catalyst for Circular Entrepreneurship

Business model innovation is a cornerstone of the transition to a circular economy. Traditional linear business models focus on maximizing short-term profits through resource extraction, production, and disposal. In contrast, circular business models

(CBMs) prioritize resource efficiency, waste reduction, and long-term sustainability. These models often involve strategies such as product life extension, sharing economy platforms, and closed-loop production systems (Munir & Fausiah, 2025) (Drissi & Touzi, 2024).

### Key Features of Circular Business Models

Circular business models are characterized by their focus on reducing environmental impact while maintaining economic viability. Some common features include:

1. **Product-as-a-Service (PaaS):** Instead of selling physical products, businesses offer services that provide the same functionality, encouraging product reuse and return (Patel, 2022).
2. **Sharing Economy:** Platforms that enable the sharing of underutilized assets, such as cars or housing, reduce the demand for new products and lower resource consumption (Verleye et al., 2023).
3. **Closed-Loop Production:** Businesses design production processes to recycle and reuse materials, minimizing waste and resource depletion (Dung et al., 2024).

### Challenges and Opportunities

While CBMs offer significant environmental benefits, their adoption is not without challenges. Barriers include high initial investment costs, lack of consumer awareness, and the need for new skills and expertise (Munir & Fausiah, 2025) (Försterling & Orth, 2023). However, these models also present opportunities for innovation, brand differentiation, and long-term profitability (Drissi & Touzi, 2024).

### Technological Advancements: Enabling the Circular Economy

Technological advancements play a pivotal role in facilitating the transition to a circular economy. Digital technologies, such as artificial intelligence (AI), blockchain, and the Internet of Things (IoT), provide the tools needed to optimize resource use, track material flows, and enable circular practices (Dung et al., 2024) (Schöggel et al., 2023).

### Key Technologies Driving the Circular Economy

1. **Digital Platforms:** Online platforms enable the sharing, reuse, and recycling of products, reducing waste and extending product lifespans (Perotti et al., 2023).
2. **Predictive Maintenance:** AI and IoT technologies can predict when products or components are likely to fail, allowing for timely repairs and reducing electronic waste (Schöggel et al., 2023).
3. **Blockchain:** This technology can track the origin, use, and recycling of materials, ensuring transparency and accountability in circular supply chains (Piciu, 2023).

### The Role of Industry 4.0

The integration of Industry 4.0 technologies, such as smart manufacturing and automation, further supports the circular economy by improving resource efficiency and reducing waste. These technologies enable businesses to design and produce products with circularity in mind, such as modular designs that facilitate disassembly and recycling (Dung et al., 2024) (Nunes

& Sytnychenko, 2024).

### Policy and Regulation: Guiding the Transition

Policy and regulation are essential for creating an environment that supports the transition to a circular economy. Governments and regulatory bodies can incentivize businesses to adopt circular practices through a combination of push and pull measures (Ferreira et al., 2024) (Ren & Albrecht, 2023).

### Policy Instruments for Circular Economy

1. **Command-and-Control Regulations:** These regulations set standards for waste reduction, recycling, and resource efficiency, compelling businesses to adopt circular practices (Ren & Albrecht, 2023).
2. **Economic Incentives:** Taxes, subsidies, and grants can encourage businesses to invest in circular technologies and practices. For example, environmental taxes can penalize waste generation, while subsidies can support recycling initiatives (Ren & Albrecht, 2023).
3. **Public Procurement:** Governments can promote circular practices by prioritizing the purchase of products and services that align with circular economy principles (Försterling & Orth, 2023).

### Challenges in Policy Implementation

Despite the potential of policy instruments, their effectiveness is often hindered by barriers such as inconsistent enforcement, lack of awareness, and resistance from businesses. Additionally, the complexity of circular economy transitions requires coordinated efforts across multiple sectors and jurisdictions (Försterling & Orth, 2023) (Ren & Albrecht, 2023).

### Interplay Between Business Model Innovation, Technology, and Policy

The transition to a circular economy is not driven by any single factor but rather by the interplay between business model innovation, technological advancements, and policy and regulation. For example, technological innovations can enable new business models, while policy measures can create the necessary incentives for their adoption (Dung et al., 2024) (Schöggel et al., 2023).

### Synergies and Feedback Loops

1. **Technology-Driven Innovation:** Advances in digital technologies can create new opportunities for circular business models, such as product-as-a-service platforms or sharing economy models (Perotti et al., 2023).
2. **Policy-Driven Adoption:** Regulations and incentives can accelerate the adoption of circular technologies and business models by reducing risks and increasing profitability (Ren & Albrecht, 2023).
3. **Business Model-Driven Policy:** Successful circular business models can demonstrate the viability of circular practices, influencing policymakers to create more supportive regulatory frameworks (Drissi & Touzi, 2024).

### Case Studies and Empirical Evidence

Several case studies and empirical analyses highlight the effectiveness of these factors in driving the transition to a

circular economy. For example, studies of small- and medium-sized enterprises (SMEs) in Europe have shown that the adoption of circular business models is strongly influenced by policy instruments, such as environmental taxes and subsidies (Ren & Albrecht, 2023). Additionally, the use of digital technologies, such as blockchain and IoT, has been shown to enhance the implementation of circular practices in manufacturing firms (Schöggl et al., 2023).

Factor	Description	Citation
Business Model Innovation	Adoption of circular business models, such as product-as-a-service and sharing economy	(Drissi & Touzi, 2024) (Patel, 2022)
Technological Advancements	Use of digital technologies like AI, IoT, and blockchain to enable circular practices	(Schöggl et al., 2023) (Perotti et al., 2023)
Policy and Regulation	Implementation of command-and-control regulations and economic incentives	(Ren & Albrecht, 2023)

**Table: Key Factors Driving the Transition to a Circular Economy**

The transition from linear to circular entrepreneurial mindsets is a complex, multi-level process. While structural innovations and technological tools provide the “how,” mindset change answers the “why.” Entrepreneurs who succeed in circular domains tend to exhibit values such as resilience, adaptability, and systemic thinking. The findings make clear that transformation is not uniform: it varies across sectors, cultures, and geographies. In developing economies, for example, circular entrepreneurship is often driven by necessity and resource scarcity, rather than environmental consciousness alone. The transition from linear to circular entrepreneurship is not merely a technical or economic shift—it represents a profound cultural and cognitive transformation. Entrepreneurs must internalize new logics of value creation that prioritize regeneration, collaboration, and resilience. The reviewed literature indicates that while progress is underway, challenges such as cultural inertia, short-termism, and policy fragmentation continue to impede widespread adoption. Education, narrative reframing, and system-level coordination are necessary to nurture the circular entrepreneurial mindset. Future research should therefore explore localized strategies and diverse cultural interpretations of circularity. Additionally, more empirical studies are needed to quantify the long-term impacts of circular business models on sustainability outcomes and economic performance.

## CONCLUSION

The transition from a linear to a circular entrepreneurial mindset is a complex process that requires the integration of business model innovation, technological advancements, and policy and regulation. Each of these factors plays a unique role in driving the adoption of circular practices, and their interplay is crucial

for achieving a sustainable future. By leveraging these factors, businesses, policymakers, and society can work together to create an economic system that is regenerative, restorative, and environmentally sustainable

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